Project Report: Evolution of eukaryotes and the Cambrian Explosion

Project Investigator:	***Susannah Porter***

Project Progress

Collaborator Susannah Porter is involved in two projects sponsored by the UCLA lead team: one that focuses on the early fossil record of animals, and one that focuses on the paleoecology & taxonomy of the ~750 Ma Chuar and Uinta Mountain Groups. Porter has nearly completed a manuscript related to the first project, and will present the work at this coming year's Geological Society of America (see highlights below). Field studies in the Uinta Mountain Group were conducted both last summer (2003) and this past June, the latter with an undergraduate research student working in her lab. Samples from last season's fieldwork have been processed and light– and scanning electron microscopy of fossils is underway. Porter also submitted a review paper on Proterozoic eukaryotes and presented two invited talks on the same subject.

Highlights

- Microstructural studies on early Cambrian fossils confirm that the radially symmetric chancelloriids are closely related to the bilaterially symmetric halkieriids, supporting accumulating evidence that shifts in body symmetry occurred several times in animal evolution (e.g., Finnerty et al., 2004, *Science* , 304: 1335). Symmetry in animal body plans is thus not as conserved as previously thought.

Roadmap Objectives

- ***Objective No. 4.1:*** Earth's early biosphere
- ***Objective No. 4.2:*** Foundations of complex life